

Date: Monday, 5/7/2007 3:24:42 PM
User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : MID TUBE ASSEMBLY
Job Number : 32234
Estimate Number : 10469
P.O. Number : N/A Part Number : D3391023
This Issue : 5/7/2007 S.O. No. : N/A Drawing Number : D3391 REV F
Prsht Rev. : NC Project Number : N/A
First Issue : N/A Type : LANDING GEAR Drawing Revision : F
Previous Run : 31848 Material : N/A
Due Date : 6/10/2007 Qty: 1 Um: Each
Written By :
Checked & Approved By : DP 7.05.07
Comment : Est. A 05.10.20 New Issue KJ/EC
Est. B 06.02.10 ECN773 dwg rev.D EC
est C 07.03.20 rev F dwg EC
est D 07.03.28 re-format EC

Additional Product

Job Number:



Seq. # Machine Or Operation: Description:

1.0 D25001100 Skidtube Extrusion



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
SKIDTUBE EXTRUSION

Pick:

Qty	Part Number	Description	Batch
1	D2500-1-100	Extrusion	B24523

DP 7-5-25

2.0 D3391021 Fwd Tube Assembly



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)
Fwd Tube Assembly
Batch: B3810

3.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1
1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open float bag holes 0.257" as per Dwg D3391

5-C'sink float bag holes as per Dwg D3391

6-Open remaining holes to Ø0.375" except for fwd saddle hole of detail "J"

DP

7-5-25

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 5/7/2007 3:24:42 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001, Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 32234

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

- 7-Remove .030" from Fwd indexing Ridge as per Dwg D3391
- 8-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391
- 9-Deburr
- 10-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,
- 11-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"
- 12-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.257" and c'sink (20 holes) as per Dwg D3391
- 13-Open .375" holes to .438" ***do not open fwd saddle holes***
- 14-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)
- 15- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allingment, open up previously tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021
- 16- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-021.
- 17- Locating from two fwd wearplate holes drill remaining 6 wearplate holes in D3391-021 using DT8937
- 18- Open 2 fwd wearplate holes in D3391-023 to .250" dia.
- 19- Open 12 wearplate holes in D3391-021 to 0.257" dia.
- 20-Deburr and blow out all chips from inside tube

DP
7-5-25

DP
7-5-28

4.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

En 07/07/12 (40)

5.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

AK / HMM 7-7-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 5/1/2007 3:24:42 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 32234

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

BE 07-08-17

7.0

D33891

Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEB

Pick:

Qty

Part Number

Description

Batch

1

D3389-1

Web

B32629

A/R

Sikaflex-241/-291

104989

Sikaflex expire date:

8-1-1

Start: 7-8-17 Time: 10:10

Finish: 7-8-17 Time: 4:00

R 7-8-17

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

2-Bond web in place as per Dwg D3391 & QSI 015.
Adhere for 12 hours)

R 7-8-17

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

BE 07/08/20

10.0

POWDER COATING

POWDER COATING



BR/FS

07-08-20



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

PRESS WASH BR/FS

07-08-20

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

M-L

07/08/24

12.0

NAS1330C3KB116

Insert



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Insert

Pick:

Qty

Part Number

Description

Batch

20

NAS1330C3KB116

Insert

M100712

M-L 07/08/24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ Date: 07/09/13

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 5/7/2007 3:24:42 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: MID TUBE ASSEMBLY

Job Number: 32234

Part Number: D3391023

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

NAS1330C3KB166

INSERT



*

Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

RivnuT

Pick:

Qty Part Number

Description

Batch

10

NAS1330C3KB166

Insert

M 103758

M.H

14.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



(X)

Comment: HAND FINISHING RESOURCE #1

Install inserts as per dwg D3391

touch-up holes in D3391-021 with alodine

M.H

07/08/24

15.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

Inspect each insert using DT8821

EP 07/08/24

16.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

PPP 333973

07/8/12 (1)

17.0

QC21

FINAL INSPECTION/W/O RELEASE



(1)

Comment: FINAL INSPECTION/W/O RELEASE

07/09/13

Job Completion



07/09/13

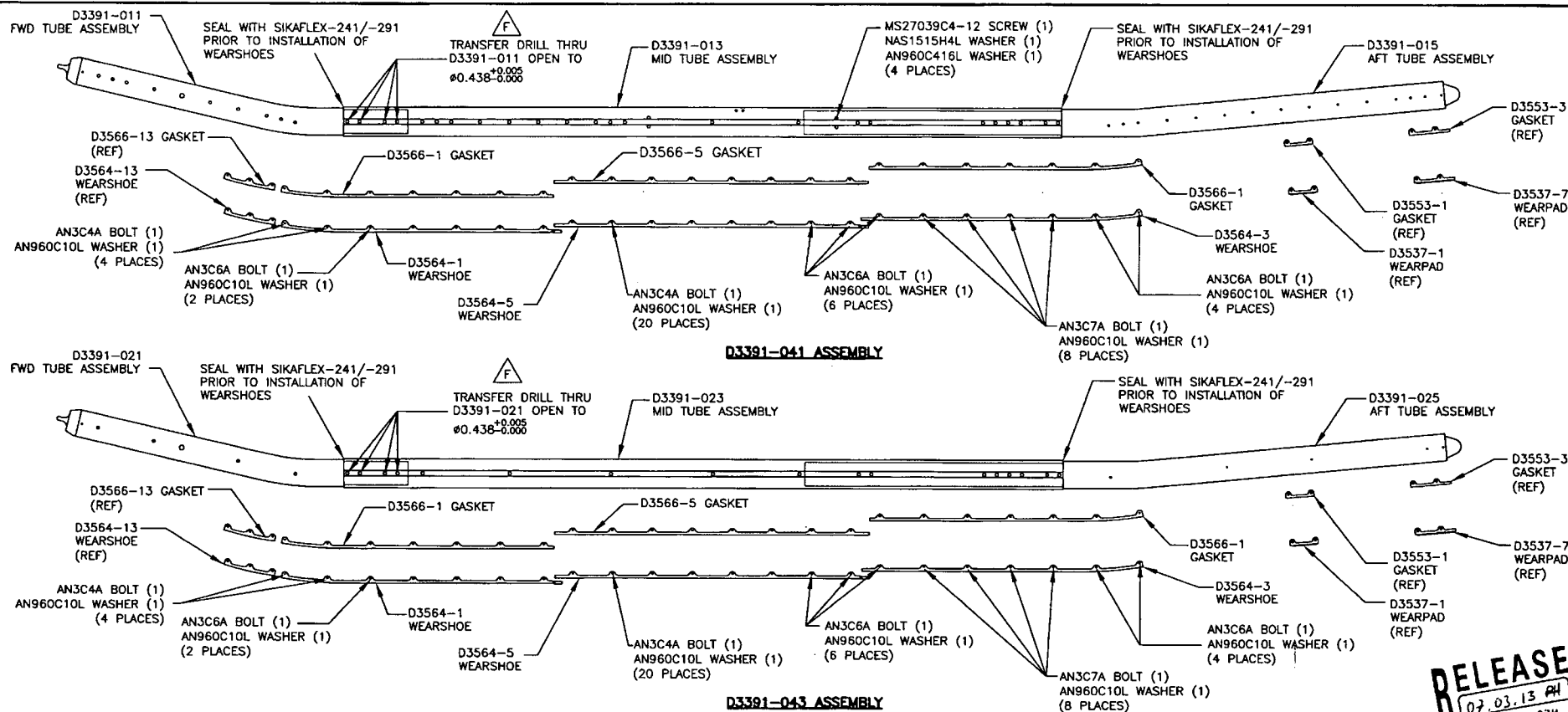
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



RELEASED
07.03.13 PH
PDR ECU #934

D3391-041/-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	QTY	PART NUMBER	DESCRIPTION
-041	-043		
X	X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
		D3391-043	FLOAT SKIDTUBE ASSEMBLY
1		D3391-011	FWD TUBE ASSEMBLY
1		D3391-013	MID TUBE ASSEMBLY
1		D3391-015	AFT TUBE ASSEMBLY
1	1	D3391-021	FWD TUBE ASSEMBLY
1	1	D3391-023	MID TUBE ASSEMBLY
1	1	D3391-025	AFT TUBE ASSEMBLY
1	1	D3566-1	WEARSHOE
1	1	D3566-3	WEARSHOE
1	1	D3566-5	WEARSHOE
2	2	D3566-13	GASKET
1	1	D3566-5	GASKET
24	24	AN3C4A	BOLT
12	12	AN3C6A	BOLT
8	8	AN3C7A	BOLT
44	44	AN960C10L	WASHER
4	4	MS27039C4-12	SCREW
4	4	NAS1515H4L	WASHER
4	4	AN960C416L	WASHER

GENERAL NOTES

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) FINISH: ACID ETCH AND ALDINE PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 4) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL 'E' SIZE HOLES (Ø0.250-Ø0.257) FOR WEARSHOE INSERTS. C'SINK Ø0.391/Ø0.425 x 100' AS APPLICABLE AND INSTALL INSERTS EXCEPT WHERE INDICATED.

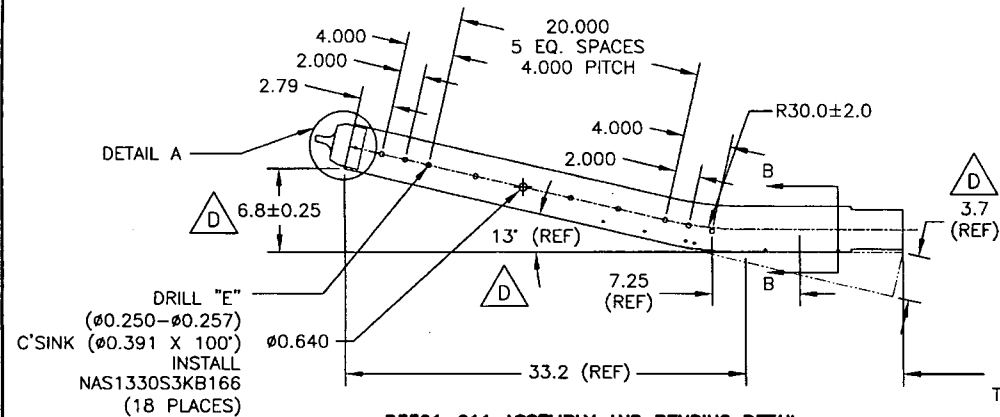
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32234

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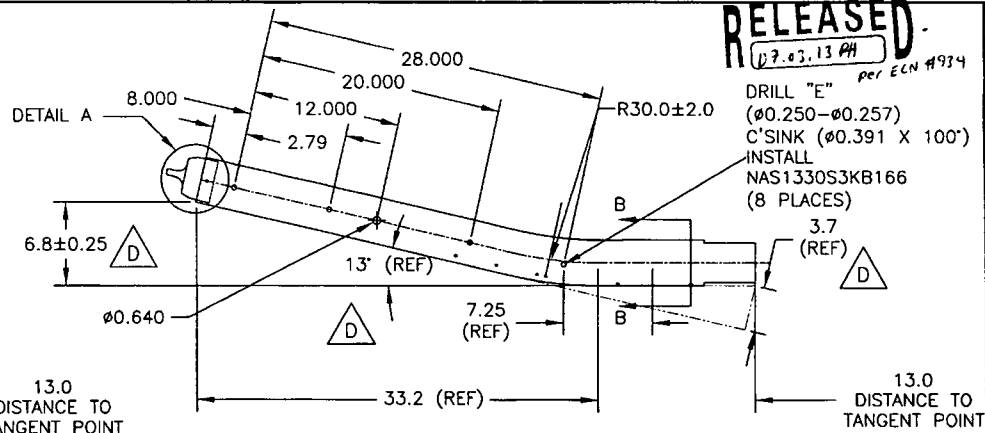
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F	07.01.18	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021
E	06.04.25	CHANGE TOLERANCE, EASE MANUFACTURE
D	06.01.23	UPDATE TOLERANCE, CHANGE HOLE SIZE
C	05.09.27	LENGTHEN AFT EXTENSION
B	05.06.10	DRAWING UPDATES
A	05.02.07	NEW ISSUE
DESIGN	PH	DRAWN BY PH
CHECKED	PH	APPROVED PH
DATE	07.01.18	TITLE
		D3391
		412 FLOAT SKIDTUBE
		REV. F
		SHEET 1 OF 5
		SCALE
		NTS

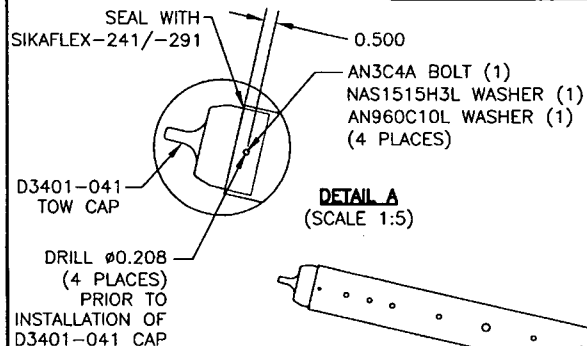
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 07.01.13 PH
 per ECN #934



D3391-011 ASSEMBLY AND BENDING DETAIL



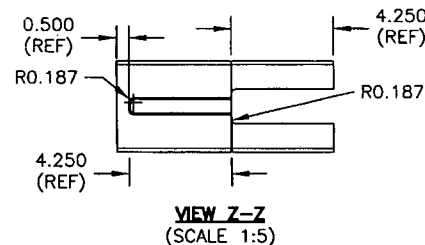
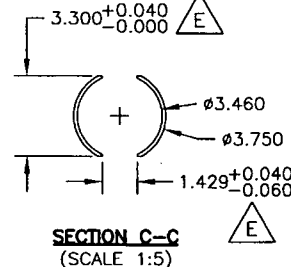
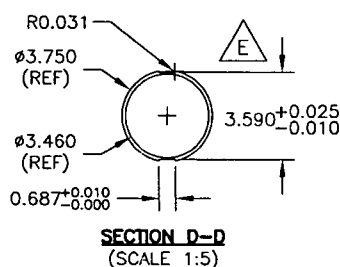
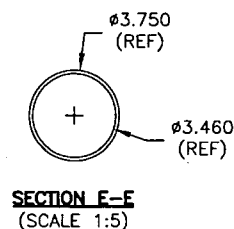
D3391-021 ASSEMBLY AND BENDING DETAIL



D3566-13 GASKET

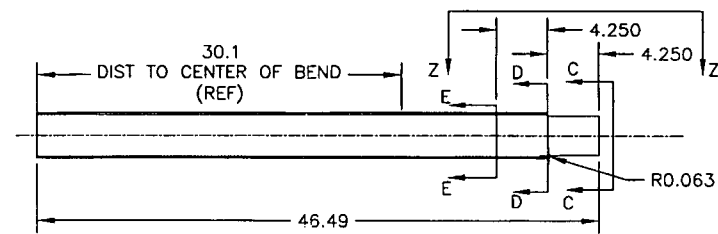
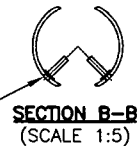
D3391-011/-021 WEARSHOE ASSEMBLY

D3564-13 WEARSHOE



D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST			
QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
10	10	AN3C4A	BOLT
4	4	NAS1515H3L	WASHER
10	10	AN960C10L	WASHER
30	20	NAS1330S3KB166	INSERT (OR NAS1330C3KB166)

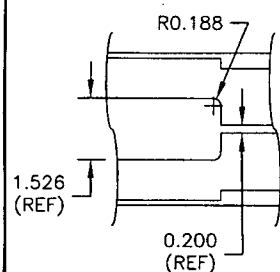
5
 DRILL "E"
 (Ø0.250-Ø0.257)
 C'SINK (Ø0.391 X 100")
 INSTALL
 NAS1330S3KB166
 (12 PLACES)



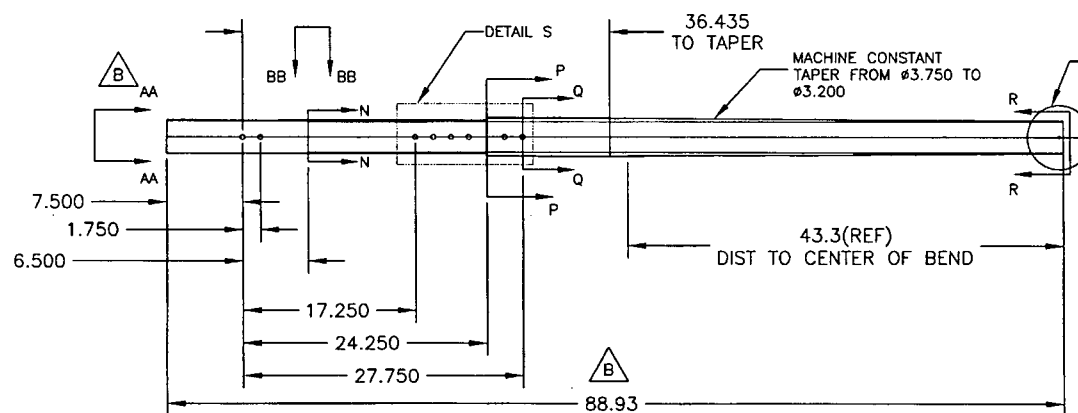
D3391-1 DRILLING AND CUTTING DETAIL
 (MAKE FROM D6013-047 SKIDTUBE MATERIAL)

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 RET. RNTD
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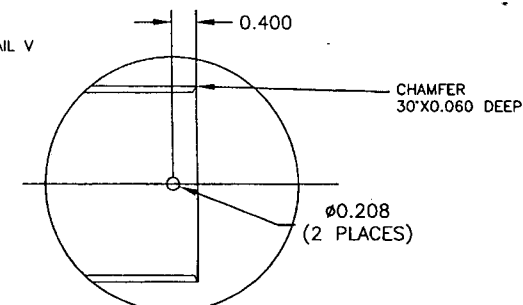
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DATE 07.01.18		TITLE 412 FLOAT SKIDTUBE		SCALE 1:10



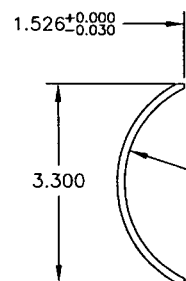
VIEW BB-BB
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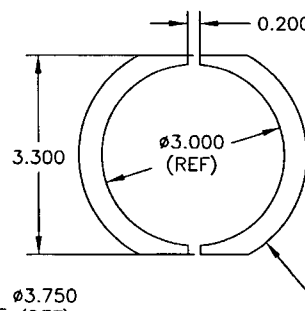
D3391-3 AFT DRILLING AND CUTTING DETAIL
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)



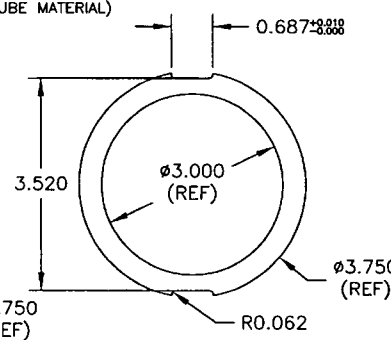
DETAIL V
(SCALE 1:2)



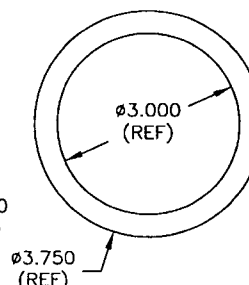
SECTION AA-AA
(SCALE 1:2)



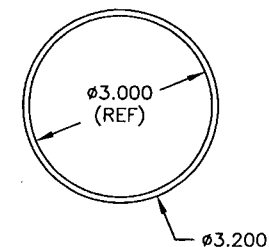
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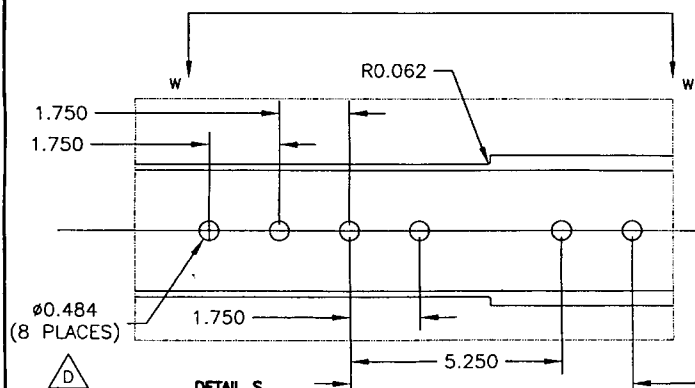
SECTION P-P
(SCALE 1:2)



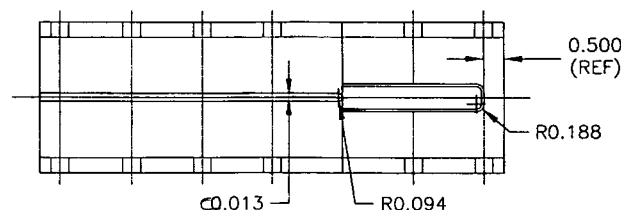
SECTION Q-Q
(SCALE 1:2)



SECTION R-R
(SCALE 1:2)



DETAIL S
(SCALE 1:3)



VIEW W-W
(SCALE 1:3)

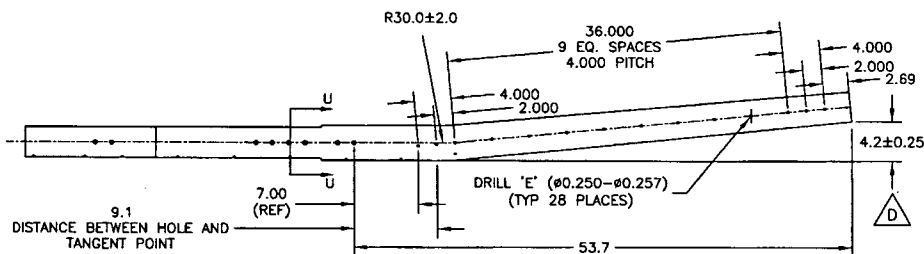
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WITHOUT NUMBER
RETURNING
SHOP COPY
TO
ENGINEERED COPY
BNCORP/00/00/00/00
SUBJECT: 412 FLOAT SKIDTUBE
WITHOUT NUMBER

RELEASED
07.03.13 PH
PER ECU #934

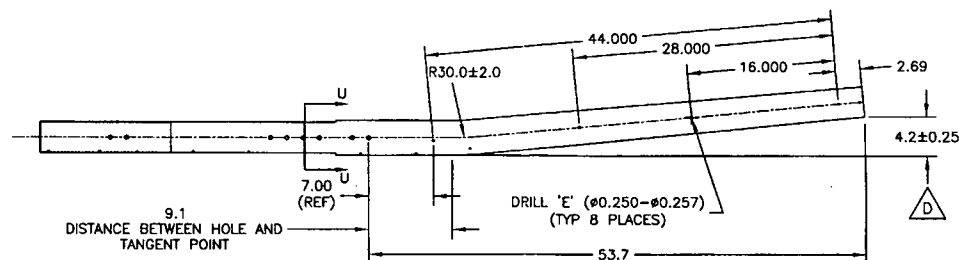
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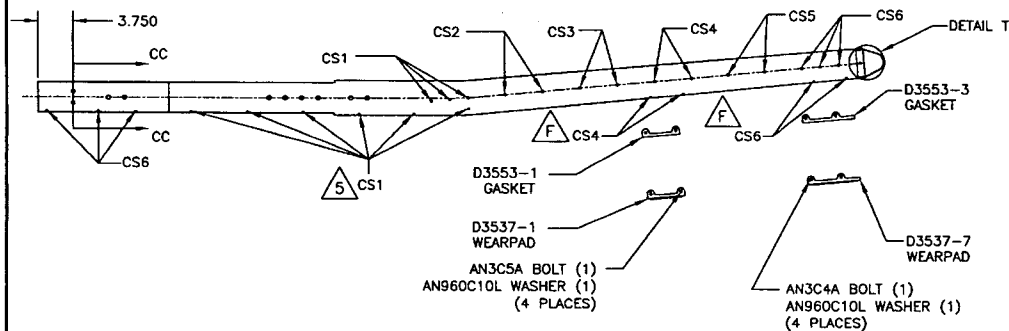
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CHECKED H	APPROVED H	DRAWING NO. D3391	SHEET 4 OF 5
DATE 07.01.18		TITLE 412 FLOAT SKIDTUBE	SCALE 1:12



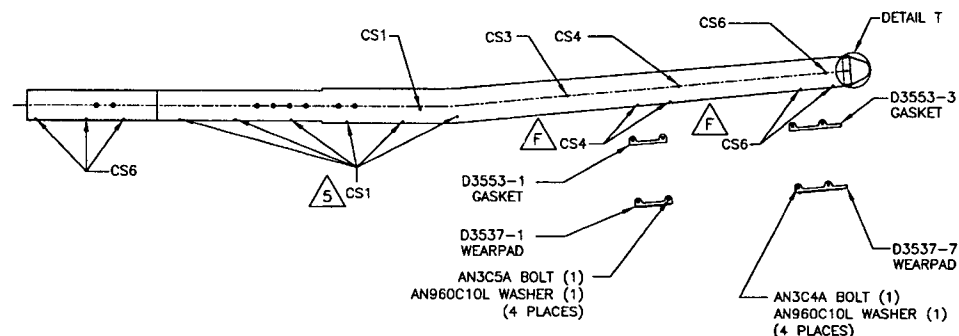
D3391-015 BENDING AND ASSEMBLY DETAIL



D3391-025 BENDING AND ASSEMBLY DETAIL



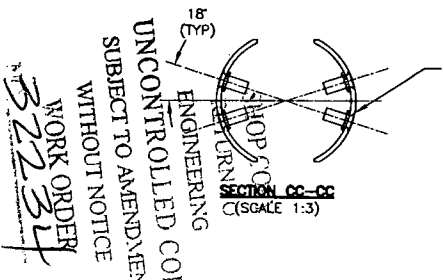
D3391-015 INSERT AND WEARPAD INSTALLATION DETAIL
(SEE TABLE)



D3391-025 INSERT AND WEARPAD INSTALLATION DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
18	14	NAS1330S3KB366	INSERT (OR AES10KB366)
4	2	NAS1330S3KB316	INSERT (OR NAS1330C3KB316)
8	6	NAS1330S3KB266	INSERT (OR NAS1330C3KB266)
4	2	NAS1330S3KB216	INSERT (OR NAS1330C3KB216)
16	12	NAS1330S3KB166	INSERT (OR NAS1330C3KB166)
4	2	NAS1330S4KB151	INSERT (OR NAS1330C4KB151)
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
2	2	NAS1515H3L	WASHER
10	10	AN960C10L	WASHER



C'SINK AND INSTALL NAS1330S3KBXXX IN HOLES MARKED CS1-CS6 AS FOLLOWS

HOLES MARKED	QTY D3391-015	QTY D3391-025	C'SINK	P/N
CS1	18	14	Ø0.425	NAS1330S3KB366
CS2	4		Ø0.391	NAS1330S3KB366
CS3	4	2	Ø0.391	NAS1330S3KB316
CS4	8	6	Ø0.391	NAS1330S3KB266
CS5	4		Ø0.391	NAS1330S3KB216
CS6	16	12	Ø0.391	NAS1330S3KB166

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DESIGN RH	DRAWN BY RH	DART DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED H	APPROVED H	DRAWING NO. D3391	REV. F SHEET 5 OF 5
DATE 07.01.18	TITLE 412 FLOAT SKIDTUBE		SCALE 1:12

RELEASED
07.03.13 RH
per ECN #534